

Executive Summary

Utah, unfortunately, has over the years become home to several species of Aquatic Invasive Species (AIS). Some AIS that exist in other areas of the nation and world have not yet made their way to Utah, but we fear they could. Prior to 2007, the Utah Division of Wildlife Resources only committed a small part of one staff person's time to the problem, although biologists statewide occasionally directed their efforts toward specific local AIS problems. Universities, tribal, federal, state and local government agencies, including private interests and organized sportsman groups also on occasion directed some effort toward the AIS problem. The advancing threat from *Dreissenid* mussels, of which the quagga mussel was found in Lake Mead during January 2007, spurred the state of Utah to action. It was the "straw that broke the camel's back." Threats and impacts from the multitude of AIS already in the state, not to mention those on their way, became fully recognized as needing more attention.

Utah Division of Wildlife Resources in concert with other partners within the Utah Department of Natural Resources launched an aggressive campaign in 2007 to:

1. Assess threats from *Dreissenid* mussels.
2. Advise the public, particularly decision makers, of the ecologic and economic impacts from *Dreissenid* mussels.
3. Develop needed policy to advise divisions within the Utah Department of Natural Resources and other departments within Utah state government about *Dreissenid* mussels and how Utah would react.

NOTE: NR-07-D-11—"Policy to Prevent Invasion Of Zebra Mussel Into Utah Waters," assigned the Utah Division of Wildlife Resources as lead agency within Utah to carryout a program.

4. Initiate an emergency "Quagga Mussel Education and Implementation Plan."
5. Secure stable funding to conduct a more robust attack against AIS in general, with *Dreissenid* species being a primary focus.

NOTE: The 2008 Utah Legislature appropriated \$2.5 million general funds, of which \$1.4 million is ongoing, to allow the Utah Division of Wildlife Resources to conduct an AIS program.

6. Develop new laws as needed.
NOTE: The 2008 Utah Legislature unanimously passed the Utah Aquatic Invasive Species Interdiction Act and the Utah Wildlife Board unanimously passed Rule R657-60, Aquatic Invasive Species Interdiction. The rule allows enforcement of the Act, facilitating enhanced enforcement, which provides authority to make stops of trailered watercraft at boat launch sites, administrative check sites, and Utah ports of entry, including a mandate for self-certification pre-launch certifying mussel free boats. It also allows the closing of water bodies that become infested with *Dreissenid* mussels to ingress/egress of watercraft and other equipment until an acceptable plan for containment and control is developed.
7. Develop and implement a comprehensive Utah Aquatic Invasive Species Management Plan.

The Utah Aquatic Invasive Species Task Force, representing a multitude of tribal, federal, state, and local government agencies; water use interests; and organized fishing groups; was formed to prepare and guide implementation of this Utah Aquatic Invasive Species Management Plan. The plan was subjected to public review via Utah Division of Wildlife Resources' five statewide Regional Advisor Councils and approved by Utah's Wildlife Board and the State of Utah's Governor, which led to ultimate approval by the national Aquatic Nuisance Species Task Force.

The main thrust of Utah's Aquatic Invasive Species Management Plan is to deal with *Dreissenid* mussels, although many activities are ongoing with other AIS. New Zealand mud snails have been found in the Loa Hatchery, and they have been found on the Midway Hatchery property (not in the hatchery yet). Actions are ongoing in Utah's hatchery system to deal with the mud snail problem. Individual hatchery Hazard Analysis Critical Control Point plans are in place, and the Utah Division of Wildlife Resources New Zealand Mud Snail (*Potamopyrgus antipodarum*) Management Plan for Loa Hatchery has been implemented.

Utah Division of Wildlife Resources' AIS biologists and others have found New Zealand mud snails in river and stream segments previously not known as infested. Verification of New Zealand mudsnail identifications has been completed by Utah's Natural Heritage Program.

Others in the aquatic section aided by Utah Aquatic Invasive Species Task Force partners are moving forward to spray treat Eurasian Milfoil in Mantua Reservoir and Fish Lake. Re-treatments will re-occur as needed.

Additionally, spray treatment followed by burning of common reed (*Phragmites* spp.) has been ongoing for several years and will continue through the efforts of the Utah Division of Wildlife Resources' waterfowl personnel throughout Utah's wetlands along the east side of the Great Salt Lake and other places. Likewise, tamarisk treatment statewide has been ongoing for years. Utah Aquatic Invasive Species Task Force partners have been participants to varying degrees across the years, too.

A full time AIS coordinator is now assigned to the Utah Division of Wildlife Resources' aquatic section. An AIS outreach specialist is assigned full time to assist with outreach needs. Also, five full time AIS biologists have been placed in the aquatic section—one in each of Utah Division of Wildlife Resources' five regions. And, 35 wildlife technicians have been assigned as seasonal employees in the aquatic section to perform as watercraft inspectors; they were placed at a multitude of priority waters statewide. Most technicians were provided with a trailer-mounted decontamination unit capable of spraying high pressure, scalding (140 degree Fahrenheit) water, which will kill all the AIS known either within or threatening Utah. Five conservation officers have been placed to assist as needed with AIS law enforcement needs, as well.

Some of the Utah Aquatic Invasive Species Task Force partners have been able to secure funding to assist in this effort and others are attempting to secure funds.

In an attempt to better perform early detection of *Dreissenid* mussels, Utah Division of Wildlife Resources' Fishery Experiment Station and the Aquatic Research Program have coordinated with Utah State University's Fish and Wildlife Department to assess research opportunity to compare various early detection methodologies. Early detection could allow attack on an invading population of *Dreissenid* mussels, possibly controlling or eradicating them. Knowledge gained from this research may lead to protocols for early detection of other AIS, too, allowing successful eradication or early control. Availability of funds will direct how and when this research might be implemented.

Additionally, Utah's AIS biologists in 2008 have taken plankton samples from 38 Utah water bodies, for assessment by qualified labs for the presence of *Dreissenids*. The assessment will first use microscopy deploying cross-polarized light. If a positive finding for *Dreissenid* occurs, a portion of the same sample will be molecularly analyzed through two different deoxyribonucleic acid polymerase chain reaction tests (PCR) as a confirmatory assessment.

The *Dreissenid* mussel campaign, beyond water craft interdictions by AIS biologists, technicians and others, including Utah Division of Wildlife Resources' conservation officers, Utah State Parks and Recreation's rangers, other Utah peace officers and Utah Department of Transportation's port of entry agents, is mostly an outreach effort. That effort operates in partnership with the U.S. Fish and Wildlife Service's national "Help Stop Aquatic Hitchhikers" program. This allows coordination amongst all of the states in the nation in order to fight aquatic invasive species. Outreach presentations in Utah and at national meetings about AIS, particularly the quagga and zebra mussel threat, have been made at many interested tribal, federal, state, and local governments or sportsman organizations.

Significant actions for outreach implementation as supported by available budget will continue as follows:

1. Utah Division of Wildlife Resources aided by our many partners, including the Utah Aquatic Invasive Species Task Force, is placing the 100th Meridian Initiative's "Zap the Zebra" brochure (250,000 units per year) statewide at locations where boaters and anglers will encounter it. During 2007 the effort included direct mail by Utah State Parks & Recreation of the brochure to 65,000 registered boaters in Utah.
NOTE: Utah Division of Wildlife Resources is negotiating with the Utah Division of Motor Vehicles to incorporate an AIS message in their annual vehicle registration packets to boaters, negating a need to direct mail the "Zap the Zebra" brochure in future years. Additionally, the Utah Division of Motor Vehicles' web site links to the AIS segment of Utah Division of Wildlife Resources' web site.
2. Utah State Parks & Recreation is direct mailing a notice annually to all fresh water boat dock users (500 units) in the state park system, detailing the quagga and zebra mussel threat, including need for decontamination of boats and equipment.
3. Utah Division of Wildlife Resources is placing table-top displays (5,000 units per

- year) across Utah at restaurants, boat dealer counters and other places where boaters and anglers would encounter the message, urging the public to "Help Stop Invasive Mussels," and to properly decontaminate their boats and equipment.
4. Numerous highway billboards are being placed statewide, urging boaters to "CLEAN," "DRAIN," and "DRY" their boats to aid in the fight against the spread of AIS. Billboard presentation equates to 168 months of advertising display.
 5. Utah Division of Wildlife Resources is placing signs (1,500 units per year as full color foam core 11" x 17") and identical posters (4,000 units per year as full color 11" x 17") across Utah in areas frequented by boaters and anglers.
 6. Utah Division of Wildlife Resources is placing entry signs (150 units per year as full color metal 33" x 54"), similar to the aforementioned poster, that demand self-certification as "mussel free" by boaters prior to launch at all significant water bodies across Utah.
 7. The corner stone of the outreach effort, which is directly linked to the watercraft inspections, is a self-certification program for boaters to certify that their watercraft have either not been contaminated with *Dreissenid* mussels, or that their boats have been properly decontaminated. Every boater contacted will be asked to certify pre-launch that they have done their part to "Help Stop Aquatic Hitchhikers." Boaters will be presented with a self-certification form and asked to sign and display it on the dashboard of their vehicle. Boaters who arrive at times when no agency personnel are present, will be instructed via the aforementioned metal entry signs to secure a self-certification form and to fill it out, displaying it on their dashboard. Containers making the self-certification form available 24/7 will be mounted with the aforementioned metal entry signs.
NOTE: Launch will not be allowed for boats needing decontamination. And, decontamination units are located at or nearby boating waters in Utah.
 8. The National Park Service at Lake Powell has been an outstanding cooperator, aiding the Utah Division of Wildlife Resources and leading by example. They have conducted a similar outreach program as described above and began it several years ago.
NOTE: The National Park Service's *Dreissenid* mussel campaign at Lake Powell has been interdicting boats from contaminated areas and conducting decontamination for several years.
 9. A rapid response strategy is included in the Utah Aquatic Invasive Species Management Plan. It will guide the Utah Aquatic Invasive Species Task Force in dealing with new arrivals of AIS or the spread of existing AIS.